General

Guideline Title

Guideline for primary antifungal prophylaxis for pediatric patients with cancer or hematopoietic stem cell transplant recipients.

Bibliographic Source(s)

Science M, Robinson PD, MacDonald T, Rassekh SR, Dupuis LL, Sung L. Guideline for primary antifungal prophylaxis for pediatric patients with cancer or hematopoietic stem cell transplant recipients. Edmonton (AB): C17 Council; 2014 Feb 26. 68 p. [109 references]

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Regulatory Alert

FDA Warning/Regulatory Alert

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- January 4, 2016 – Noxafil (posaconazole) : The U.S. Food and Drug Administration (FDA) is cautioning that differences in dosing regimens between the two oral formulations of the antifungal Noxafil (posaconazole) have resulted in dosing errors. To help prevent additional medication errors, the drug labels were revised to indicate that the two oral formulations cannot be directly substituted for each other but require a change in dose. Direct mg for mg substitution of the two formulations can result in drug levels that are lower or higher than needed to effectively treat certain fungal infections.

Recommendations

Major Recommendations

Definitions of the grades for recommendation (strong recommendation, weak recommendation) and quality of evidence (high quality evidence, moderate quality evidence, low quality evidence) are provided at the end of the "Major Recommendations" field.

Health Question 1: Should Primary Antifungal Prophylaxis Be Used to Prevent Invasive Fungal Infection (IFI) in Children Undergoing Allogeneic

Hematopoietic Stem Cell Transplant (HSCT)? If So, What Medication (Dose and Duration) Should Be Used?

Recommendation 1.1: Allogeneic HSCT During and Immediately Following Conditioning

- For children one month to less than 19 years of age undergoing allogeneic HSCT, administer fluconazole 6–12 mg/kg/day (maximum 400 mg/day) intravenous (IV) or oral (PO) from the start of conditioning until engraftment (strong recommendation, high quality evidence).
- For the above children where fluconazole is contraindicated, administer an echinocandin as an alternative to fluconazole (strong recommendation, moderate quality evidence).

Note: Adjust fluconazole dose in children with renal impairment. Consideration may be given to initiating antifungal prophylaxis on the day of transplant for patients receiving conditioning agents known or suspected to interact with fluconazole.

Recommendation 1.2: Allogeneic HSCT with Acute Grade II-IV Graft versus Host Disease (GVHD) or Chronic Extensive GVHD

- For children 13 years of age or older undergoing allogeneic HSCT with acute Grade II–IV or chronic extensive GVHD, prophylaxis with posaconazole 200 mg PO three times a day (TID) from GVHD diagnosis until resolution of acute Grade II-IV GVHD or chronic extensive GVHD is suggested (weak recommendation, moderate quality evidence).
- For the above children where posaconazole is contraindicated, fluconazole 6 – 12 mg/kg/day (maximum 400 mg/day) IV/PO is suggested as an alternative to posaconazole (weak recommendation, low quality evidence).
- For children one month to less than 13 years of age, fluconazole 6–12 mg/kg/day (maximum 400 mg/day) IV/PO from GVHD diagnosis until resolution of acute Grade II–IV GVHD or chronic extensive GVHD is suggested (weak recommendation, low quality evidence).

Health Question 2: Should Antifungal Prophylaxis Be Used to Prevent IFI in Children Undergoing Autologous HSCT? If So, What Medication (Dose and Duration) Should Be Used?

Recommendation 2.1: Autologous HSCT with Anticipated Neutropenia Greater Than 7 days

- For children one month to less than 19 years of age undergoing autologous HSCT with anticipated neutropenia for more than 7 days, administer fluconazole 6–12 mg/kg/day (maximum 400 mg/day) IV/PO from the start of conditioning until engraftment (strong recommendation, moderate quality evidence).

Health Question 3: Should Antifungal Prophylaxis Be Used to Prevent IFI in Children with Acute Myeloid Leukemia (AML) or Myelodysplastic Syndrome (MDS)? If So, What Medication (Dose and Duration) Should Be Used?

Recommendation 3.1: Children with AML or MDS

- For children one month to less than 19 years of age with AML or MDS, administer fluconazole 6–12 mg/kg/day (maximum 400 mg/day) IV/PO during chemotherapy-associated neutropenia (strong recommendation, moderate quality evidence).
- For children 13 years of age or older with AML or MDS, posaconazole 200 mg PO TID is suggested as an alternative to fluconazole in centers where there is a high local incidence of mold infections or if fluconazole is not available (weak recommendation, moderate quality evidence).

Health Question 4: Should Antifungal Prophylaxis Be Used to Prevent IFI in Children with Malignancy and Anticipated Neutropenia Greater Than 7 Days? If So, What Medication (Dose and Duration) Should Be Used?

Recommendation 4.1: Children with Malignancy and Anticipated Neutropenia Greater Than 7 Days Other Than Those Undergoing HSCT or with AML or MDS

- The panel suggests that antifungal prophylaxis not be given routinely to children with malignancy and neutropenia anticipated to persist for greater than 7 days, outside of patients undergoing HSCT or those with AML/MDS (weak recommendation, moderate quality evidence).

Definitions:

Grades for Recommendations*

Grade for Recommendation	Benefit vs. Risk and Burdens	Methodology	Implications
1A Strong	Desirable effects clearly outweigh undesirable effects	Evidence from well done randomised controlled trials (RCTs) *or*	Apply to most patients in most circumstances

Grade for Recommendation	Benefit vs. Risk and Burdens	Methodology	Implications
recommendation, high-quality evidence	or *vice versa*	Exceptional observational studies	Further research unlikely to change recommendation
1B Strong recommendation, moderate quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence from RCTs with some flaws in study *or* Very strong evidence from observational studies	Apply to most patients in most circumstances Further research might be helpful
1C Strong recommendation, poor quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence of at least one critical outcome from observational studies, case series or RCTs with flaws	Apply to most patients in many circumstances Further research would be helpful
2A Weak recommendation, high quality evidence	Desirable effects closely balanced with undesirable effects	Consistent evidence from RCTs without important flaws *or* Exceptionally strong evidence from observational studies	Best action may depend on circumstances or patient or society values Further research unlikely to change recommendation
2B Weak recommendation, moderate quality evidence	Desirable effects closely balanced with undesirable effects	Evidence from RCTs with important flaws *or* Very strong evidence from observational studies	Best action dependent on patient circumstances or patient or society values Further research may change recommendation
2C Weak recommendation with poor quality evidence	Desirable effects closely balanced with undesirable effects	Evidence of at least one critical outcome from observational studies, case series or RCTs with serious flaws	Other alternatives may be equally reasonable Further research very likely to change recommendation

*American College of Chest Physicians (ACCP) criteria

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Invasive fungal infections (IFI) in pediatric cancer patients or hematopoietic stem cell transplant (HSCT) recipients, including:

- Invasive yeast infections (i.e., *Candida*)
- Invasive mold infections (i.e., *Aspergillus*)

Note: The scope of this guideline is limited to the assessment of primary antifungal prophylaxis in the context of the patient's clinical status and underlying medical condition and does not address issues related to other medical diagnoses.

Guideline Category

Assessment of Therapeutic Effectiveness

Prevention

Risk Assessment

Clinical Specialty

Hematology

Infectious Diseases

Oncology

Pediatrics

Intended Users

Advanced Practice Nurses

Hospitals

Nurses

Pharmacists

Physicians

Utilization Management

Guideline Objective(s)

- To provide healthcare professionals with evidence-based recommendations on the use of primary antifungal prophylaxis in children with cancer or undergoing hematopoietic stem cell transplant (HSCT)
- To identify clinical circumstances in patients with cancer or undergoing HSCT where primary antifungal prophylaxis has been studied
- In the circumstances where primary antifungal prophylaxis has been studied, to provide recommendations on whether or not primary antifungal prophylaxis is indicated and the choice of antifungal agent to be given in different clinical circumstances
- To reduce the incidence of invasive fungal infection (IFI) in children with cancer or undergoing HSCT

Target Population

All patients one month to less than 19 years of age with cancer or receiving hematopoietic stem cell transplant (HSCT) in whom primary prophylaxis is a consideration

Interventions and Practices Considered

1. Primary antifungal prophylaxis for children with hematologic malignancy or hematopoietic stem cell transplant (HSCT)
    - Fluconazole
    - Echinocandins
    - Posaconazole
2. Routine prophylaxis to children with malignancy and neutropenia (not recommended)

Major Outcomes Considered

- Proven or probable invasive fungal infection (IFI)
- Fungal-related mortality
- Overall mortality
- Adverse events

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Searches of Unpublished Data

Description of Methods Used to Collect/Select the Evidence

Identification and Appraisal of Existing Guidelines

The initial stages of this project were informed by the guideline adaptation methodology developed by the ADAPTE Collaboration and CAN-ADAPTE. The ADAPTE process is a systematic approach to considering the use and/or modification of existing guidelines developed in one context for application in a different context, so as to enhance the efficient production and use of high-quality adapted guidelines. The strategies for searching for guidelines and guideline adaptation are outlined in Appendix D in the original guideline document.

Guideline Search Strategy

In May and June of 2010, the Guideline for Primary Antifungal Prophylaxis for Pediatric Hematology/Oncology Patients Development Panel completed a comprehensive literature review with librarian support to identify guidelines on the use of antifungal prophylaxis in patients with malignancy or undergoing stem cell transplantation. The guideline search was conducted through to June 2010. The search details including search terms are provided in Appendix D in the original guideline document.

To summarize in brief, literature searches of MEDLINE (OvidSP; 1966 to April Week 2 2011), Cumulative Index to Nursing & Allied Health Literature (CINAHL; OvidSP and EBSCO host; 1980 to April 2011) and PubMed were performed. Grey literature was searched by using the search engine Google. Individual panel members also reviewed their personal files, professional association documents and their own institutional documents for guidelines that were relevant for review.

Guideline Search Results

Five guidelines on antifungal prophylaxis were identified and assessed using the Appraisal of Guidelines for Research & Evaluation (AGREE) instrument. All five guidelines were focused primarily on adult recommendations with a limited pediatric information. Based on the overall assessment of the guidelines and the number of recommendations received, it was a unanimous group decision to use the Infectious Disease Working Party (AGIHO) of the German Society of Haematology and Oncology Recommendations for "Primary prophylaxis of invasive fungal infections in patients with hematologic malignancies" as the basis for guideline adaptation. The American Society for Blood and Marrow Transplantation (ASBMT) Guidelines for preventing infectious complications among Hematopoietic Cell Transplantation Recipients as well as National Comprehensive Cancer Network (NCCN) Guidelines on prevention and treatment of cancer-related infections were identified as having strengths that would be used to influence the development of the present guideline. A subsequent search also identified the Infectious Disease Society of America (IDSA) guideline that was also considered in this guideline development.

Despite the number of guidelines to provide direction on the use of antifungal prophylaxis, there was a lack of evidence-based guidelines that were specifically within the scope of antifungal prophylaxis for pediatric patients. Both the ASBMT and NCCN guidelines are general guidelines based primarily on adult literature. The AGIHO guidelines were felt to be more rigorous and complete and formatted in a manner that would suit the purposes of this guideline. However, the AGIHO guidelines are also largely based on adult patient data. It is recognized that extrapolation of adult recommendations to the pediatric population is not always appropriate considering the differences in clinical disease, treatment protocols and the pharmacokinetics and pharmacodynamics of the medications. As a result, it was decided that a comprehensive search of both pediatric and adult literature was appropriate in order to expand the evidence base on which to make recommendations and allow for emphasis to be placed on pediatric literature.

Systematic Review of Primary Studies

Primary Literature Search Strategy

Panel members ran searches using the OVID search platform in the following databases: MEDLINE, EMBASE, and Cochrane Central Register

of controlled trials (CCTR). In addition, panel members searched conference proceedings of the American Society of Clinical Oncology and the American Society of Hematology (2004–2011). The tables and text presented in Appendix E in the original guideline document record the search strategies and terms used. The initial search was conducted September 8, 2011 and updated August 29, 2012. The updated search yielded one additional study requiring inclusion after the content and stakeholder review. However, the results did not impact the recommendations.

Eligibility Criteria

Types of Studies

All randomized controlled trials comparing two antifungal agents, placebo or no prophylaxis were included. Trials were from any year and in any language.

Population

Trials conducted in patients of any age receiving chemotherapy for cancer or undergoing hematopoietic stem cell transplant (HSCT) (regardless of source of stem cells) were included. Trials involving patients with previous fungal disease were excluded (i.e., secondary antifungal prophylaxis trials).

Intervention

Trials involving any of the following antifungal agents were included as long as they were administered systemically for prophylaxis: amphotericin B (conventional and lipid formulations), caspofungin, micafungin, anidulafungin, fluconazole, itraconazole, voriconazole or posaconazole. Trials with nonsystemic antifungals were excluded (i.e., oral or inhaled amphotericin). Studies of pre-emptive or empiric therapy or antifungal treatment were excluded.

Comparison

Trials comparing a systemic antifungal agent to either another systemic antifungal agent, placebo or no prophylaxis were included. Trials were excluded if more than one anti-fungal agent (systemic or nonsystemic) was given in the treatment or comparator arm (i.e., combined prophylaxis trials).

Outcome

The outcomes of interest included: proven or probable invasive fungal infection (IFI), fungal-related mortality, overall mortality and adverse events. Trials reporting on only suspected IFI, empiric antifungal therapy use or fungal colonization were excluded.

Number of Source Documents

Guideline Search Results

Five guidelines on antifungal prophylaxis were identified and assessed using the Assessment of Guidelines for Research & Evaluation (AGREE) instrument. A subsequent search also identified the Infectious Disease Society of America (IDSA) guideline that was also considered in this guideline development.

Primary Literature Search Results

As of August 29, 2012, a total of 11,255 references were identified from MEDLINE, EMBASE, Cochrane Central Register of controlled trials (CCTR) and conference abstracts. All references were saved in an EndNote library used to identify the 3386 duplicates. The author reviewed the remaining 7869 unique references against the inclusion criteria. From those citations, a total of 46 full publications and 1 conference abstract met the eligibility criteria (see Figure 1 in the original guideline document).

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

See "Rating Scheme for the Strength of Recommendations" field, below.

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Guideline Selection Criteria and Appraisal

The guideline inclusion/exclusion criteria are outlined in detail in Appendix D in the original guideline document. Guidelines identified through the search were reviewed by the panel for relevance. Each guideline considered potentially relevant was independently reviewed and scored by 4 panel members, using the Appraisal of Guidelines for Research & Evaluation (AGREE) instrument. The AGREE instrument provides a framework for the evaluation of guideline quality on the basis of 6 domains: scope and purpose; stakeholder involvement; rigour of involvement; clarity and presentation; applicability; and editorial independence. Domain scores and overall assessments from each reviewer were compiled for each guideline, and results were presented for discussion at an in-person panel meeting. Panel members were provided copies of all guidelines to facilitate discussion of the results and reach consensus on the suitability of each guideline for guideline adaptation via the ADAPTE process. Each guideline was discussed as to why they were or were not recommended. Particular attention was paid to rigor scores and guideline scope.

The selected guideline was to be updated by literature published since its development. However, after reviewing the available guidelines, it was determined that none of the guidelines considered pediatric specific literature. As a result, it was decided to undertake a comprehensive review of both pediatric and adult literature in order to develop a broader evidence base on which to make recommendations and allow for an emphasis to be placed on pediatric evidence.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Guideline Development Panel

The C^{17} Guidelines Committee identified antifungal prophylaxis as a key supportive care initiative in 2009. The C^{17} Antifungal Prophylaxis Working Group was formed in June 2009. Members were selected from C^{17} sites across Canada with the aim to have an inter-disciplinary team including individuals with content expertise and guideline development experience.

Decision-Making Process for Formulation of Recommendations

Recommendations were developed for each of the *a priori* identified patient populations (allogeneic stem cell transplantation, autologous stem cell transplantation, acute myeloid leukemia [AML]/myelodysplastic syndrome [MDS] and malignancy with anticipated neutropenia greater than 7 days). Included trials were considered in the evidence base for a specific patient population if the population accounted for more than 40% of the patients in the trial. This meant that some trials were considered for evidence in more than one patient population. Trials conducted in homogeneous patient populations were given higher weight as were pediatric specific trials and trials that included children.

For each patient population, the evidence base was reviewed by the committee members. Recommendations were established through panel discussions, whereby any differences of opinion were resolved by consensus. If consensus was unable to be reached, a vote was cast. The quality of evidence and strength of recommendations were assessed using the GRADE system developed by Guyatt et al. by the lead author and confirmed through discussion by the remaining panel members. The panel purposely did not seek to include patient input because the primary outcomes of interest were development of invasive fungal infection (IFI), fungal-related mortality and overall mortality. The panel felt that these decisions were made primarily by healthcare teams rather than patients. However, the impact of prophylaxis on patients was considered when making the recommendations, including ease/route of drug administration, tolerability and adverse effects. The panel also considered cultural issues, but did not identify any for this guideline.

Rating Scheme for the Strength of the Recommendations

Grades for Recommendations*

Grade for Recommendation	Benefit vs. Risk and Burdens	Methodology	Implications
1A Strong recommendation, high-quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence from well done randomised controlled trials (RCTs) *or* Exceptional observational studies	Apply to most patients in most circumstances Further research unlikely to change recommendation
1B Strong recommendation, moderate quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence from RCTs with some flaws in study *or* Very strong evidence from observational studies	Apply to most patients in most circumstances Further research might be helpful
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*American College of Chest Physicians (ACCP) criteria

Cost Analysis

The guideline developers reviewed published cost analyses.

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

External Review Process

The draft guideline was reviewed in a two stage process; content review and stakeholder review. Initially, the guideline was reviewed by a panel of experts in pediatric hematology/oncology and infectious disease. A total of 17 experts were contacted to review the document on December 4, 2011. Eleven of 17 experts responded. The experts were asked to complete a questionnaire; their responses and the panel's responses, including

changes to the draft guideline, are summarized in Appendix F in the original guideline document.

Secondly, the guideline was sent to all C[17] sites for stakeholder review on April 30, 2012. Similar to the content review process, the stakeholders were asked to complete a questionnaire; their responses and the panel's responses/guideline changes are summarized in Appendix F in the original guideline document. A total of 42 responses were received. All cancer centers across Canada had at least one representative with the exception of one center.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate use of primary antifungal prophylaxis to reduce the incidence of invasive fungal infection (IFI) in patients with cancer or undergoing hematopoietic stem cell transplant (HSCT)

Potential Harms

Adverse events leading to discontinuation of fluconazole and other antifungals

See the summary of evidence and comparison tables in the original guideline document for specific adverse events associated with each antifungal prophylaxis agent.

Qualifying Statements

Qualifying Statements

- C[17] supportive care guidelines are developed by Canadian health professional specialists using evidence-based or best practice references at the time of their creation. Format and content of the guidelines will change as they are reviewed and revised on a periodic basis. Care has been taken to ensure accuracy of the information. However, any physician or health professional using these guidelines will be responsible for administering care according to their own institutional policies and standards.
- This guideline has been developed within the context of pediatric oncology and hematopoietic stem cell transplant (HSCT). It is acknowledged that the recommendations presented here are based on the available evidence and that there are many gaps. Readers are reminded that implementation of these recommendations will require adaptation to the local context appreciating factors such as individual patient needs and preferences, clinician knowledge, skill and practice scope, available resources and organizational policies and standards. The choice of antifungal may also be affected by patient co-morbidities, the local incidence and prevalence of fungal disease, local epidemiology and environmental factors, antifungal resistance patterns, and potential drug-drug interactions.
- The information contained in this document was prepared with care. However, any application of this material is expected to be based on judicious independent medical assessment in the context of individual clinical circumstances or with the input of a qualified clinician. The C[17] Guidelines Committee does not make any guarantees of any kind with respect to the content or use or application of this guideline. The C[17] Guidelines Committee disclaims any responsibility for the application or use of this guideline.

Implementation of the Guideline

Description of Implementation Strategy

Implementation Considerations

The guideline will be circulated to the seventeen Canadian centers providing tertiary pediatric hematology/oncology care for feedback prior to finalization of the guideline. This is an essential step to identify and address concerns and build consensus. This will also allow identification of center specific barriers to guideline implementation and develop multi-faceted implementation strategies targeting these barriers to change. The aspect most likely to cause difficulty in implementation is the site availability and financial burden of some of the recommended antifungal agents (i.e., posaconazole). To deal with this, panel members plan to specifically target administrators of health care institutions, insurance companies and pharmacies with educational interventions. Alternative antifungal agents are also presented in the guideline for those instances where a medication is contraindicated or not available.

A second aspect that may affect implementation is the geographical differences in fungal species, including higher rates of mold infections at certain centers. This may result in some centers recommending the use of broader agents to include mold coverage when our recommendation is for a narrower agent.

It will also be essential to communicate the recommendations to physicians, nurses and pharmacists at the various C^{17}sites. To accomplish this knowledge transfer, panel members will employ multiple strategies including educational interventions, monitoring and feedback and collaborative care with pharmacists. Panel members will identify key stakeholders at the various C^{17}hospital sites to conduct small group sessions to disseminate the information to other physicians, nurses and pharmacists with the goal of incorporating these antifungal prophylaxis recommendations into protocols. A key component of this knowledge transfer will be to educate health care providers about the use of prophylaxis and considerations if a patient develops an invasive fungal infection (IFI) having received antifungal prophylaxis. In general, the use of a chemoprophylaxis strategy based on one antifungal class, precludes use of members of that class for therapy. Finally, computerized real-time alerts could provide reminders to physicians to order antifungal prophylaxis when patients are admitted for chemotherapy or stem cell transplantation.

Tools for Application

Appropriate information and support will be provided to families so as to facilitate decision-making regarding the risks and benefits of antifungal prophylaxis when the guideline has been approved.

Organizational Barriers and Cost Implications

Potential organizational barriers/cost implications to applying the recommendations found in this guideline include:

- Inability to obtain antifungal agents
- Costs of some antifungal agents

Patient/ family preferences:

- Religious or other objection to antifungal prophylaxis
- Administration limitations of some antifungal agents (need for intravenous medication vs. oral)

Implementation Tools

Audit Criteria/Indicators

Quick Reference Guides/Physician Guides

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2014 Feb 26

Guideline Developer(s)

C17 Council - Professional Association

Source(s) of Funding

Resources for guideline development were provided by the C^{17} Council, an organization that represents the 16 pediatric cancer centers in Canada. Guideline development was editorially independent from the funder.

Guideline Committee

C^{17} Guidelines Committee

Composition of Group That Authored the Guideline

Panel Members: Michelle Science, pediatric infectious disease; Lillian Sung, pediatric hematologist/oncologist; Rod Rassekh, pediatric hematologist/oncologist; Tamara MacDonald, clinical pharmacy specialist; L. Lee Dupuis, clinical pharmacy manager; Paula Robinson, guideline methodologist

Financial Disclosures/Conflicts of Interest

Conflicts of interest were determined for each panel member prior to beginning the guideline process; none were declared.

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Electronic copies: Available from the C17 Council Web site .

Availability of Companion Documents

The following is available:

- Science M, Robinson PD, MacDonald T, Rassekh SR, Dupuis LL, Sung L. Guideline for primary antifungal prophylaxis for pediatric patients with cancer or hematopoietic stem cell transplant recipients. Pediatr Blood Cancer. 2014 Mar;61(3):393-400. Electronic copies: Available from the Pediatric Blood & Cancer Web site .

In addition, key criteria for monitoring and/or audit purposes are provided in Appendix J in the original guideline document .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on February 26, 2015. The information was verified by the guideline developer on March 3, 2015. This summary was updated by ECRI Institute on January 6, 2016 following the U.S. Food and Drug Administration advisory on Noxafil (posaconazole).

Copyright Statement

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